

Amendments to the Claims:

This listing of claims will replace all versions and listings of claims in the application:

Listing of Claims:

1. – 58. (Canceled)

59. (previously presented) A circulating fluidized bed reactor comprising:

 a reaction chamber that provides hot gases having particles;

 a centrifugal separator having a separation chamber that separates particles from the hot gases coming from the reaction chamber, wherein the reaction chamber and the separation chamber have a common wall disposed therebetween, the common wall having opposing sides, whereby one opposing side defines at least a portion of a wall of the reaction chamber and the other opposing side defines at least a portion of a wall of the separation chamber; and

 an acceleration duct disposed to provide fluid communication of the hot gases between the reaction chamber and the separation chamber of the centrifugal separator, wherein at least part of the acceleration duct is disposed within the reaction chamber.

60. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the common wall is a single wall.

61. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the common wall is a double wall.

62. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the common wall is straight.

63. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the acceleration duct is disposed entirely in the reaction chamber.

64. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the at least part of the acceleration duct is disposed in the top of the reaction chamber.

65. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the acceleration duct has an extrados whereby an inlet mouth of the acceleration duct is substantially parallel to the extrados of the acceleration duct.

66. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the acceleration duct has an extrados whereby an inlet mouth of the acceleration duct is substantially perpendicular to the extrados of the acceleration duct.

67. (previously presented) The circulating fluidized bed reactor of claim 59, further including a rear cage wherein the rear cage and the reaction chamber have a common wall.

68. (previously presented) The circulating fluidized bed reactor of claim 59, further including a rear cage wherein the rear cage and the separation chamber of the centrifugal separator have a common wall.

69. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the reaction chamber, the centrifugal separator, and a rear cage are aligned.

70. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the reaction chamber, the centrifugal separator, and a rear cage are disposed at a right angle.

71. (previously presented) The circulating fluidized bed reactor of claim 59, further including a deflector disposed in the reaction chamber that directs particles to the acceleration duct.

72. (previously presented) The circulating fluidized bed reactor of claim 59, wherein the acceleration duct includes a floor that is inclined toward the centrifugal separator.

73. (previously presented) The circulating fluidized bed reactor of claim 59, further including a rear cage that is horizontal.

74. (previously presented) The circulating fluidized bed reactor of claim 59, further including a rear cage that is situated under the centrifugal separator.

75. (previously presented) The circulating fluidized bed reactor of claim 59, further including:

- a secondary centrifugal separator having a secondary separation chamber that separates particles from the hot gases coming from the reaction chamber, wherein the reaction chamber and the secondary separation chamber have a common wall therebetween; and

- a secondary acceleration duct disposed to provide fluid communication of the hot gases between the reaction chamber and the secondary separation chamber of the secondary centrifugal separator, wherein at least part of the secondary acceleration duct is disposed within the reaction chamber.

76. (previously presented) A circulating fluidized bed reactor comprising:

- a reaction chamber that provides hot gases having particles;

- a centrifugal separator having a separation chamber that separates particles from the hot gases coming from the reaction chamber, wherein a wall of the reaction chamber and a wall of the separation chamber of the centrifugal separator are contiguous; and

- an acceleration duct disposed to provide fluid communication of the hot gases between the reaction chamber and the separation chamber of the centrifugal separator, wherein at least part of the acceleration duct is disposed within the reaction chamber.

77. (previously presented) The circulating fluidized bed reactor of claim 76, wherein the wall of the reaction chamber and the wall of the centrifugal separator are straight.

78. (previously presented) The circulating fluidized bed reactor of claim 76, wherein the acceleration duct is disposed entirely in the reaction chamber.

79. (canceled)

80. (previously presented) The circulating fluidized bed reactor of claim 76, wherein the acceleration duct has an extrados whereby an inlet mouth of the acceleration duct is substantially parallel to the extrados of the acceleration duct.

81. (previously presented) The circulating fluidized bed reactor of claim 76, wherein the acceleration duct has an extrados whereby an inlet mouth of the acceleration duct is substantially perpendicular to the extrados of the acceleration duct.

82. (previously presented) The circulating fluidized bed reactor of claim 76, further including a rear cage wherein the rear cage and the reaction chamber have a common wall.

83. (previously presented) The circulating fluidized bed reactor of claim 76, further including a rear cage wherein the rear cage and the separation chamber of the centrifugal separator have a common wall.

84. (previously presented) The circulating fluidized bed reactor of claim 76, wherein the reaction chamber, the centrifugal separator, and a rear cage are aligned.

85. (previously presented) The circulating fluidized bed reactor of claim 76, wherein the reaction chamber, the centrifugal separator, and a rear cage are disposed at a right angle.

86. (previously presented) The circulating fluidized bed reactor of claim 76, further including a deflector disposed in the reaction chamber that directs particles to the acceleration duct.

87. (previously presented) The circulating fluidized bed reactor of claim 76, wherein the acceleration duct includes a floor that is inclined toward the centrifugal separator.

88. (canceled)

89. (previously presented) The circulating fluidized bed reactor of claim 76, further including a rear cage that is situated under the centrifugal separator.

90. (previously presented) The circulating fluidized bed reactor of claim 76, further including:

- a secondary centrifugal separator having a secondary separation chamber that separates particles from the hot gases coming from the reaction chamber, wherein the reaction chamber and the secondary separation chamber have a common wall therebetween; and

- a secondary acceleration duct disposed to provide fluid communication of the hot gases between the reaction chamber and the secondary separation chamber of the secondary centrifugal separator, wherein at least part of the secondary acceleration duct is disposed within the reaction chamber.

91. (previously presented) A circulating fluidized bed reactor comprising:

- a reaction chamber that provides hot gases having particles;

- a centrifugal separator having a separation chamber that separates particles from the hot gases coming from the reaction chamber;

- an acceleration duct disposed to provide fluid communication of the hot gases between the reaction chamber and the centrifugal separator, wherein at least part of the acceleration duct is disposed within the reaction chamber; and

- a deflector disposed in the reaction chamber that directs particles to the acceleration duct.

92. (previously presented) The circulating fluidized bed reactor of claim 91, wherein the deflector comprises tubes diverted from at least one wall of the reaction chamber.

93. (previously presented) The circulating fluidized bed reactor of claim 91, wherein the deflector is formed by rounding a floor of the acceleration duct.

94. (previously presented) A circulating fluidized bed reactor comprising:

a reaction chamber that provides hot gases having particles;

a centrifugal separator having a separation chamber that separates particles from the hot gases coming from the reaction chamber;

an acceleration duct disposed to provide fluid communication of the hot gases between the reaction chamber and the centrifugal separator, wherein at least part of the acceleration duct is disposed within the separation chamber of the centrifugal separator.

95. (new) A circulating fluidized bed reactor of claim 76, wherein the wall of the reaction chamber and the wall of separation chamber are facing each other.